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【137】 Full Elasticity Tensor from Thermal Diffuse Scattering

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Diffuse scattering from thermally populated phonons contains important details on elastic and thermodynamic properties. I will show that high-precision measurements of thermal diffuse scattering together with a rigorous data analysis allow for the determination of the full elasticity tensor in a single crystal diffraction experiment 1.

The new approach allows the measurement of elastic properties together with the crystal structure in the same experiment and offers the opportunity to study tiny single crystals regardless of shape, symmetry and optical properties.

1 B. Wehinger, A. Mirone, M. Krisch, and A. Bosak, Full Elasticity Tensor from Thermal Diffuse Scattering, Phys. Rev. Lett. 118, 035502 (2017).

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